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**/Monika J. Hussell/**

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**IN THE UNITED STATES PATENT & TRADEMARK OFFICE**

Appellant: Delcomyn, C. et al. Paper No.:  
Serial No.: 10/693,194 Group Art Unit: 1751  
Filed: October 23, 2003 Examiner: John R. Hardee  
For: **Universal Halide-Enhanced Decontaminating Formulation**

**APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

The present Appeal Brief is submitted in support of the Notice of Appeal filed by  
electronic filing on April 2, 2007.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee of the present application, Applied Research  
Associates, Inc. of Albuquerque, New Mexico.

**II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences known to the Appellant, the Appellant's  
undersigned legal representative or the assignee which will directly effect or be directly effected  
by or having a bearing on the Board's decision in the present appeal.

**III. STATUS OF THE CLAIMS**

Claims 1-8, 10, 12-23, 25-36 and 38-43 are currently pending in the present application,  
and claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-43 are currently subject to examination.  
Claims 41-43 are allowed. Claims 8, 10, 12-14, 21-23, 25-27, 34-36 and 38-40 stand rejected  
and are the subject of the present appeal. A complete copy of pending claims 8, 10, 12-14, 21-  
23, 25-27, 34-36 and 38-40 on appeal is set forth in the Appendix.

#### **IV. STATUS OF AMENDMENT FILED SUBSEQUENT TO REJECTION ON APPEAL**

Appellants have appealed the Examiner's final rejection of the claims set forth in the Official Action dated February 1, 2007. A Response Under 37 C.F.R. 1.116, without claim amendments, was submitted on April 2, 2007. An Advisory Action was mailed on April 12, 2007 indicating that the Examiner had considered the April 2 response and found it unpersuasive.

#### **V. SUMMARY OF THE INVENTION**

The present invention is directed to an environmentally benign universal decontaminant solution for rapid, on-site neutralization of toxic substances (published application form, paragraph [0017]). The inventive water-based compositions provide a combination of oxidants and halide salts that results in an unexpected synergistic effect with respect to rates of decontamination, and provides buffers that permit practical, noncorrosive and safe application over a wide variety of field conditions, such that the inventive compositions are particularly useful in large scale/area decontamination efforts as would be needed by first-responders in, for example, military defense operations (paragraph [0022]). In addition, the inventive compositions are formulated to effectuate in situ generation of hypohalite (e.g. paragraphs [0011] and [0012]), negating the problematic storage, transport and handling issues generally associated with hypohalite-containing compositions (paragraph [0015]), thus providing further substantial benefits over currently available decontamination compositions.

According to independent claim 8, the composition comprises one or more oxidants, at least one of which is selected from the group consisting of: a monopersulfate compound in the forms derived from alkali metal salt of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid; perborate; peracetate; percarbonate; hydrogen peroxide; and dioxirane compounds, wherein the oxidants are present in the composition in a concentration range of about 0.1-40% w/v (paragraph [0025]); one or more halides, at least one of which is selected from the group consisting of an alkali metal and an alkaline earth or transition metal halide salt, wherein the halides are present in the composition in a concentration range of about 0.1-40% w/v (paragraphs [0024] and [0032]); a buffer selected from the group consisting of alkali metal salt forms of carbonate and bicarbonate, capable of bringing the composition to a pH in the range of about 4 to about 10, wherein the buffer is present in the composition in a concentration range of about 0.05-20% w/v (paragraph [0028]); and water (paragraph [0024]). Claims 10 and 12-14 further define the compositions of claim 8.

The composition embodiment defined by independent claim 21 is very similar to that defined by claim 1, except that the halides are present in the composition in a range of about 3-40% w/v, and the limitation of wherein the oxidants, halides and buffers are present in sufficient amounts to generate hypochlorite species in solution (paragraph [0030]), is expressly recited. Dependent claims 22, 23, 26 and 27 further define the compositions of claim 21.

The compositions defined by independent claim 34 are also very similar to those defined by independent claim 1, except that the buffer is not defined by compound, but rather, is functionally defined as being capable of bringing the composition to a pH in the range of about 6 to about 10 (paragraph [0028]) and is present in the composition in a concentration range of about 0.05-20% w/v (paragraph [0032]). Claims 35, 36, and 38-40 further define the composition embodiment set forth in claim 34.

## **VI. ISSUE ON APPEAL**

There is one issue on appeal for review by the Board, as follows:

A. The rejection of claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Serial No. 09/355,154 to Willey (hereafter "Willey").

## **VII. GROUPING OF THE CLAIMS**

A. With respect to the above noted issue A on appeal, Appellants concede that claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 stand or fall together.

## **VIII. ARGUMENTS**

As will be set forth in detail below, the compositions as defined by claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 are nonobvious and patentable over the teachings U.S. Patent Application Serial No. 09/355,154 to Willey. In particular, Willey expressly and unequivocally teaches away from the present invention such that a person of ordinary skill in the art, guided by the teachings of Willey, would not produce the presently inventive compositions. Accordingly, the rejections of claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 under 35 U.S.C. § 103(a) should be reversed. Favorable action by the Board is respectfully requested.

### **A. The Claimed Compositions Are Not Obvious Over Willey**

The compositions as defined by claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 are not obvious in view of and are patentable over Willey.

## **1. The Invention**

According to the embodiment defined by independent claim 8, the inventive composition comprises one or more oxidants, at least one of which is selected from the group consisting of: a monopersulfate compound in the forms derived from alkali metal salt of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid; perborate; peracetate; percarbonate; hydrogen peroxide; and dioxirane compounds, wherein the oxidants are present in the composition in a concentration range of about 0.1-40% w/v; one or more halides, at least one of which is selected from the group consisting of an alkali metal and an alkaline earth or transition metal halide salt, wherein the halides are present in the composition in a concentration range of about 0.1-40% w/v; a buffer selected from the group consisting of alkali metal salt forms of carbonate and bicarbonate, capable of bringing the composition to a pH in the range of about 4 to about 10, wherein the buffer is present in the composition in a concentration range of about 0.05-20% w/v; and water.

According to dependent embodiments, Claim 10 provides the composition having a pH of between about 6 and about 8.5, and according to claim 12, the oxidant(s) the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v, the composition defined by Claim 13 further comprises one or more co-solvents and one or more surfactants, while the composition defined by Claim 14 provides compositions wherein the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, the surfactant(s) are present in the composition in a concentration of about 0.01-5% w/v, the co-solvent(s) are present in the composition in a concentration of about 10-80% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

Independent claim 21 defines composition embodiments comprising one or more oxidants, at least one of which is selected from the group consisting of: a monopersulfate compound in the forms derived from alkali metal salt of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid; perborate; peracetate; percarbonate; hydrogen peroxide; and dioxirane compounds, wherein said oxidants are present in the composition in a concentration range of about 0.1-40% w/v; one or more halides, at least one of which is selected from the group consisting of an alkali metal and an

alkaline earth or transition metal halide salt, wherein the halides are present in the composition in a concentration range of about 3-40% w/v; a buffer capable of bringing the composition to a pH in the range of about 4 to about 10, wherein the buffer is present in the composition in a concentration range of about 0.05-20% w/v; and water, and expressly includes the recitation of wherein the oxidants, halides and buffers are present in sufficient amounts to generate hypochlorite species in solution.

Dependent embodiments are defined by Claim 22, further providing wherein the buffer is selected from the group consisting of alkali metal salt forms of carbonate and bicarbonate, and phosphate, and Claim 23, directed to compositions having a pH of between about 6 and about 8.5. According to dependent Claim 25, the compositions of claims 21 or 22 have the oxidant(s) present in the composition in a concentration of about 1-20% w/v, the halide(s) present in the composition in a concentration of about 3-20% w/v, and the buffer present in the composition in a concentration range of about 0.5-10% w/v, while the embodiment defined by Claim 26 comprises one or more co-solvents; and one or more surfactants. The compositions defined by dependent Claim 27 further narrow component ranges so that the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 3-20% w/v, the surfactant(s) are present in the composition in a concentration of about 0.01-5% w/v, the co-solvent(s) are present in the composition in a concentration of about 10-80% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

According to independent Claim 34, the inventive composition comprises: one or more oxidants, at least one of which is selected from the group consisting of: a monopersulfate compound in the forms derived from alkali metal salt of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid; perborate; peracetate; percarbonate; hydrogen peroxide; and dioxirane compounds, wherein said oxidants are present in the composition in a concentration range of about 0.1-40% w/v; one or more halides, at least one of which is selected from the group consisting of an alkali metal and an alkaline earth or transition metal halide salt, wherein the halides are present in the composition in a concentration range of about 0.1-40% w/v; a buffer capable of bringing the composition to a pH in the range of about 6 to about 10, wherein the buffer is present in the composition in a concentration range of about 0.05-20% w/v; and water.

Dependent embodiments include Claim 35, depending from Claim 34, providing compositions wherein the buffer is selected from the group consisting of alkali metal salt

forms of carbonate and bicarbonate, and phosphate, Claim 36, providing compositions having a pH of between about 6 and about 8.5, and Claim 38, narrowing the component ranges so that the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v. According to claim 39, the compositions further comprise one or more co-solvents; and one or more surfactants. Claim 40 further limits the compositions of claim 39 stipulating that the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, the surfactant(s) are present in the composition in a concentration of about 0.01-5% w/v, the co-solvent(s) are present in the composition in a concentration of about 10-80% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

## **2. The Examiner's Position**

In rejecting claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 under 35 U.S.C. § 103(a) as being obvious and unpatentable over Willey, the Examiner noted that Willey discloses photobleaching compositions comprising phthalocyanines (an oxidant suitable for low-hue photobleaching (paragraph [0001])). The Examiner asserts that the Willey compositions may further comprise (1) about 0.1-10% inorganic salts such as sodium chloride, citing to paragraph [0313], (2) peroxygen bleaches such as Oxone, citing to paragraph [0316], (3) unspecified amounts of buffers such as carbonate or bicarbonate, which adjust the compositions to a pH of about 7-13, citing to paragraph [0328], (4) surfactants as disclosed in paragraphs [0305] et seq., and (5) co-solvents as disclosed at paragraph [0294]. The Examiner notes that Willey differs from the present invention in that "it does not disclose a composition which reads on applicant's claims with sufficient specificity to constitute anticipation." The Examiner cites case law for the proposition that when claimed ranges overlap or lie inside ranges disclosed by the prior art, a prima facie case of obviousness exists, and concludes that the present inventive compositions are obvious because Willey teaches all the ingredients recited by Appellants as suitable and that a person of ordinary skill in the art would expect the recited composition to have properties similar to those compositions exemplified, absent a showing to the contrary. See Office Action dated October 16, 2006, pages 2-3.

Appellants rebutted the Examiner's prima facie case noting, inter alia, that Willey affirmatively and unequivocally teaches away from inclusion of hypohalite by expressly

excluding it from a definition of suitable bleaching agents, and by teaching that his compositions are intended as a fabric and color-safe alternative to "conventional bleaches (i.e. hypochlorite)" (paragraph [0277] ). Willey therefore affirmatively teaches away from a selection of ingredients which would yield hypohalite, an ingredient essential to the functioning of the present inventive compositions. In response to Appellants' rebuttal of the asserted prima facie case, the Examiner argued that Willey teaches addition of substances that may "increase the action" of the compositions, expressly disclosing sodium chloride in this context. The Examiner asserted that this teaching "infers" that Willey contemplates compositions comprising hypohalite because "a person of ordinary skill in the chemical arts would realize that addition of sodium chloride to an oxidant composition would produce hypochlorite." See Office Action dated February 1, 2007, pages 2-3.

Finally, after Appellants filed their Response to this Office Action on April 2, 2007, further expressing their position regarding Willey's teaching away from the inclusion of hypohalite in its formulation, the Examiner stated his alternative interpretation of Willey: "At [0314], the reference teaches that any bleaching agent can be used. What follows is a further description of bleaches other than hypohalites which can be used. No explicit or implicit negative limitation on hypohalite can be fairly read or inferred from this teaching." See Office Action dated April 12, 2007, page 2.

**3. The Present Invention is Not Rendered Obvious by Willey.**

**a. Willey Affirmatively Teaches Away From the Present Invention.**

All embodiments of the present inventive compositions require, inter alia, oxidant, halide, and buffer, and are formulated to achieve in situ generation of hypohalite. Generally, the present invention provides an environmentally benign decontaminant solution comprising at least one oxidant and halide salt for neutralizing, e.g., chemical toxicants, and specifically provides methods for the in situ generation of hypochlorite by a monopersulfate compound and alkali metal chloride salt.

As Appellants have argued repeatedly (see Response dated January 13, 2007, Response and Amendment dated April 2, 2007), Willey cannot render the present inventive compositions obvious because, to the extent a prima facie case may exist based on a broad generic disclosure of presently recited ingredients, it is effectively rebutted by Willey's express teaching away from a selection of ingredients that would yield the combination of ingredients disclosed as essential to the functioning of the present inventive compositions.

Willey relates to low-hue photobleaching compositions comprising specifically defined photoactivators and optionally comprising, inter alia, salts, bleaching agents or bleach activators. Willey is affirmative and unequivocal that suitable bleaching agents for optional use in the Willey photoactivator compositions ***do not include hypohalite (e.g., hypochlorite) bleaches*** (paragraph [0314]). Specifically, the Willey disclosure states that “[t]he bleaching agents used herein can be any of the bleaching agents useful for detergent compositions in textile cleaning, hard surface cleaning, or other cleaning purposes that are now known or become known. These include oxygen bleaches ***other than the hypohalite (e.g. hypochlorite) bleaches***. Perborate (e.g., mono- or tetra-hydrate sodium salts) and percarbonate bleaches can be used herein” (paragraph [0314] emphasis added). The Examiner argues that this paragraph teaches that any bleaching agent can be used, and that the sentence emphasized above does not limit the same, but rather provides a further description of bleaches “other than hypohalites” that can be used. See Office Action dated April 12, 2007, page 2. As the Examiner further states that “[n]o explicit or implicit negative limitation on hypohalite can be fairly read or inferred from this teaching,” Appellants can only surmise that the Examiner interprets paragraph 314 to allow hypohalite bleaches, by defining the Willey phrase “other than” to mean “in addition to” rather than “but not.”

However, the Examiner’s interpretation is not supported by the remainder of the Willey disclosure. For example, in the sole Willey claim directed to a “bleaching composition,” Willey explicitly limits and defines the compositions as comprising a “non-hypohalite bleach” (claim 11). Further, Willey expressly discloses that one advantage of the Willey photobleaching systems is to provide “more fabric and color safe systems than conventional bleaches (*i.e. hypochlorite*)” (paragraph [0277] emphasis added). The above recited paragraph 314 of the Willey disclosure, alone and taken in context with the remainder of the specification, cannot be interpreted as suggested by the Examiner. All bleaching agents are not suitable for use in the Willey composition – by the express terms of the disclosure, hypohalite bleaches are clearly prohibited.

In his rejection and arguments in support thereof, the Examiner combines one Willey adjunct ingredient (a salt, namely, sodium chloride) with another optional ingredient (a bleaching agent, namely, OXONE) to generate a hypohalite, thereby violating the ingredient selection guidance provided by Willey to avoid inclusion of the expressly prohibited hypohalite.



The Examiner perplexingly persists that Willey teaches such a combination. Upon close review of the context of Willey's disclosure of salts and bleaching agents, Willey teaches the inclusion of salts (such as sodium chloride) in his low-hue photobleaches in four instances: (1) as an optional element in his fabric sterilization formulation, absent any reference to a bleaching agent or bleach activator which, in combination with the salt, would produce a hypohalite (paragraph [0295]); (2) as an optional element of his surface bleaching formulation absent any reference to a bleaching agent or bleach activator, which, in combination with the salt, would produce a hypohalite (paragraph [0296]); (3) as an option substance to "increase the action" (undefined), absent any reference to a bleaching agent or bleach activator which, in combination with the salt, would produce a hypohalite (paragraph [303]); and (4) as an optional adjunct ingredient defined as inert filler salts, once again absent any reference to a bleaching agent or bleach activator which, in combination with the salt, would produce a hypohalite (paragraphs [0336-0337]).

The Examiner argues that the suggestion in the third reference, above, to add sodium chloride to "increase the action" refers to "presumably the bleaching action" of the formulation. However, Willey refers to this "increase in action" with respect to "the processes according to the invention." More likely then, Willey is referring to an increase in the photobleaching action of the photochemical single oxygen generators described as "the invention" in Willey. Alternatively, the fourth reference above provides an inference that the salts (such as sodium chloride) are used in Willey's formulations exclusively as inert fillers; in fact, salts are commonly used as fillers in household disinfecting products. As a "filler" they serve the purpose of providing bulk to the formulation, thereby increasing the surface area to which it may be applied (and thus increasing the "action" of the formulation). However, if combined with the optional ingredient OXONE, they may cease to function in either of these capacities but rather may be destroyed in the generation of a hypohalite. Thus, the selection of ingredients proposed by the Examiner not only generates the prohibited hypohalite, but also may act to destroy the purposes of the salt in the formulation.

Another distinct group of optional ingredients referenced by Willey are bleaching agents (such as OXONE) and bleach activators [0313-0327]. While sodium chloride is known to function similar to a bleach activator for the bleaching agent OXONE, it is conspicuously missing from the extensive list of suitable bleach activators in Willey (in accord with Willey's express teaching against the use of a hypohalite bleach). Furthermore, since Willey directly contemplates the use of a bleach activator with a bleach agent (and

prefers such as combination with peroxygen bleaching agents (paragraph [0319]), there is no teaching or suggesting to use a salt to serve a similar purpose. If additional bleaching action is desired, Willey clearly suggests selection of a bleach activator as described in his disclosure. Thus, there is no support in Willey to use a salt in lieu of a bleach activator, particularly when the combination of the bleach agent and the salt generate the prohibited hypohalite. Furthermore, Willey specifically references the combination of an abrasive with a bleaching agent "to create more intimate contact between hard surface stain and the surfactant and/or bleaching agents..." (paragraph [0337]). No such specific combination is found between OXONE and sodium chloride, or between any bleaching agent and a salt that would generate the prohibited hypohalite.

For these reasons it is absolutely clear that Willey teaches against the selection as optional ingredients in his formulations of both a persulfate bleach, such as OXONE, and a halide salt, such as sodium chloride, which combine to form a hypochlorite. None of the Willey description or examples suggest such a combination, and Willey's express text teaches emphatically against it. Appellants submit that the Willey language constitutes a classic and unequivocal "teaching away" from bleaching compositions comprising hypohalite oxygen bleaches.

To "infer" means to reason logically from the circumstances, or derive logical conclusions from known premises. Willey teaches photobleaching compositions, certain of which may contain oxygen bleaches. Willey teaches the addition of sodium chloride to some compositions in order to "increase the activity." Willey expressly prohibits compositions comprising a hypohalite oxygen bleach. The inference that flows logically from the totality of these teachings is that sodium chloride or any halide salt may not be added to a Willey composition containing an oxygen bleach in order to avoid producing the prohibited hypohalite. Appellants respectfully submit that there is no logical line of reasoning that leads to the Examiner's "inference" that the Willey teachings stand for the suggestion that sodium chloride or hypohalite may be added to Willey compositions comprising oxygen bleaching agents.

To establish *prima facie* obviousness of the claimed invention, all the claim limitations must be taught or suggested by the prior art, *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). A *prima facie* case of obviousness, if established, may be rebutted by a showing that the prior art teaches away from the claimed invention, *In re Geisler*, 116 F.3d 1465, 1469, 1471, 43 USPQ2d 1362 (Fed. Cir. 1997). "A reference may be

said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant” *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130 (Fed. Cir. 1994). **Clear discouragement of a combination constitutes teaching away**, *In re Fulton*, 391 F.3d 1195, 1199-1200, 73 USPQ2d 1141 (Fed. Cir. 2004). Willey expressly teaches that hypohalite, including hypochlorite, is excluded from the Willey photobleaching compositions. The *logical* inference, therefore, is that Willey prohibits combinations of ingredients which would yield hypohalite. Appellants' invention, on the other hand, depends in substantial part on the in situ generation of hypohalite by the unique combination of ingredients including specified oxidants and halide salts in water, in order to achieve the desired synergism. The presently inventive compositions are expressly formulated to achieve generation of the very species expressly excluded from the compositions of Willey.

### **VIII. CONCLUSION**

For the reasons set forth in detail above, the compositions defined by the claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 are nonobvious and patentably distinguishable over the teachings of Willey. Accordingly, the rejections of claims 8, 10, 12-14, 21-23, 25-27, 34-36, and 38-40 under 35 U.S.C. §103 should be reversed. Favorable action by the Board is respectfully requested.

Respectfully submitted,

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## **CLAIM APPENDIX**

### **Claims on Appeal:**

8. [*previously presented*] A composition comprising:

one or more oxidants, at least one of which is selected from the group consisting of: a monopersulfate compound in the forms derived from alkali metal salt of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid; perborate; peracetate; percarbonate; hydrogen peroxide; and dioxirane compounds, wherein said oxidants are present in the composition in a concentration range of about 0.1-40% w/v;

one or more halides, at least one of which is selected from the group consisting of an alkali metal and an alkaline earth or transition metal halide salt, wherein said halides are present in the composition in a concentration range of about 0.1-40% w/v;

a buffer selected from the group consisting of alkali metal salt forms of carbonate and bicarbonate, capable of bringing the composition to a pH in the range of about 4 to about 10, wherein said buffer is present in the composition in a concentration range of about 0.05-20% w/v; and

water.

10. [*previously presented*] The composition of claim 8, having a pH of between about 6 and about 8.5.

12. [*previously presented*] The composition of claims 8, 9 or 10, wherein the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

13. [*previously presented*] The composition of claims 8, 9 or 10, further comprising one or more cosolvents; and one or more surfactants.

14. [*previously presented*] The composition of claim 13, wherein the oxidant(s) are present in

the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, the surfactant(s) are present in the composition in a concentration of about 0.01-5% w/v, the co-solvent(s) are present in the composition in a concentration of about 10-80% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

21. [*previously presented*] A composition comprising:

one or more oxidants, at least one of which is selected from the group consisting of: a monopersulfate compound in the forms derived from alkali metal salt of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid; perborate; peracetate; percarbonate; hydrogen peroxide; and dioxirane compounds, wherein said oxidants are present in the composition in a concentration range of about 0.1-40% w/v;

one or more halides, at least one of which is selected from the group consisting of an alkali metal and an alkaline earth or transition metal halide salt, wherein said halides are present in the composition in a concentration range of about 3-40% w/v;

a buffer capable of bringing the composition to a pH in the range of about 4 to about 10, wherein said buffer is present in the composition in a concentration range of about 0.05-20% w/v; and

water,

wherein the oxidants, halides and buffers are present in sufficient amounts to generate hypochlorite species in solution.

22. [*previously presented*] The composition of claim 21, wherein the buffer is selected from the group consisting of alkali metal salt forms of carbonate and bicarbonate, and phosphate.

23. [*previously presented*] The composition of claim 21, having a pH of between about 6 and about 8.5.

25. [*previously presented*] The composition of claims 21 or 22, wherein the oxidant(s) are

present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 3-20% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

26. [*previously presented*] The composition of claims 21, 22 or 23, further comprising one or more cosolvents; and one or more surfactants.

27. [*previously presented*] The composition of claim 26, wherein the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 3-20% w/v, the surfactant(s) are present in the composition in a concentration of about 0.01-5% w/v, the co-solvent(s) are present in the composition in a concentration of about 10-80% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

34. [*previously presented*] A composition comprising:

one or more oxidants, at least one of which is selected from the group consisting of: a monopersulfate compound in the forms derived from alkali metal salt of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid; perborate; peracetate; percarbonate; hydrogen peroxide; and dioxirane compounds, wherein said oxidants are present in the composition in a concentration range of about 0.1-40% w/v;

one or more halides, at least one of which is selected from the group consisting of an alkali metal and an alkaline earth or transition metal halide salt, wherein said halides are present in the composition in a concentration range of about 0.1-40% w/v;

a buffer capable of bringing the composition to a pH in the range of about 6 to about 10, wherein said buffer is present in the composition in a concentration range of about 0.05-20% w/v; and

water.

35. [*previously presented*] The composition of claim 34, wherein the buffer is selected from the group consisting of alkali metal salt forms of carbonate and bicarbonate, and phosphate.
36. [*previously presented*] The composition of claim 34, having a pH of between about 6 and about 8.5.
38. [*previously presented*] The composition of claims 34 or 35, wherein the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.
39. [*previously presented*] The composition of claims 34, 35 or 36, further comprising one or more cosolvents; and one or more surfactants.
40. [*previously presented*] The composition of claim 39, wherein the oxidant(s) are present in the composition in a concentration of about 1-20% w/v, the halide(s) are present in the composition in a concentration of about 1-20% w/v, the surfactant(s) are present in the composition in a concentration of about 0.01-5% w/v, the co-solvent(s) are present in the composition in a concentration of about 10-80% w/v, and the buffer is present in the composition in a concentration range of about 0.5-10% w/v.

## **EVIDENCE APPENDIX**

None



## **RELATED PROCEEDING APPENDIX**

None